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BENDIGO HOSPITAL.

Two Cases of Leucocytæmia. Reported by P. H. MACGILLIVRAY, A. M., Resident Surgeon.

CASE I.—William Archibald, a miner, aged 28, admitted into the hospital on the 26th July, 1862.

About a month before his admission, he first felt slight pain commencing in the region of the spleen, and shooting over to the opposite side. At the same time he noticed a swelling, which slowly increased, but the increase was so gradual that it scarcely attracted his attention. Had always previously enjoyed good health.

He was a middle-sized man, with sufficient colour in his face, but the rest of his body presenting rather a pale, unhealthy appearance. His digestion was tolerably good; bowels regular. Heart and lungs normal; pulse about 80. On examining the abdomen, the liver was found to be enlarged, and slightly painful on percussion along the anterior edge. The spleen was enormously enlarged, extending to within three inches of Poupart's ligament inferiorly, and from three inches in front of the spine to beyond the umbilicus. It was quite hard, except that occasionally small portions, especially one part in the neighbourhood of the umbilicus, crepitated on pressure. The circumference of abdomen at its thickest part, about two inches above the umbilicus, was $38\frac{1}{2}$ inches. A drop of blood from the finger, when placed under the microscope, showed the characteristic appearance in leucocytæmia,—a very great increase in the proportion of colourless corpuscles.

It is needless to detail minutely the progress of the case up to the patient's death, on the 11th October. The symptoms he complained of remained much the same. They were chiefly distension of the abdomen, oppression in breathing, occasional great pain in the spleen, shooting in paroxysms as high as the shoulder, and sometimes extending to the opposite side of the abdomen. He suffered greatly from night sweats. His bowels were frequently constipated, never more than moderately relaxed, and

the urine was at times scanty and loaded with urates and uric acid. The occasional symptoms were combatted as they appeared; the perspirations were checked by sulphuric acid, or acetate of lead and opium; the constipation by aromatic purgatives, and the diminution of urine by nitrate or acetate of potash. Various remedies were tried in the general treatment of the case, but none seemed to have the slightest effect. Iodine was freely applied over the spleen. Internally were given in succession iodide of potassium, quinine, bromide of potassium, and iodide of iron. His diet was as nourishing as his appetite would permit. Until within a few days of his death but little change could be perceived in him, except that he got gradually weaker, his appetite not quite so strong, and the pain in the spleen a little more severe. The circumference of the abdomen remained much the same. On the 9th of October, the dyspnoea became rather greater, and on the morning of the 11th, after having passed a tolerably comfortable night, he quietly and somewhat unexpectedly expired. There was at no time any appearance of anasarca.

The examination of the body was made twenty-four hours after death. It was a good deal emaciated. The skin on the neck, breast, legs, and arms, presented scattered patches of psoriasis; the left side of the thorax was slightly protuberant. In the abdomen, the left side was a little fuller and more prominent, especially near the umbilicus.

The membranes of the brain were quite healthy. The brain itself was healthy, except that the lower part was uniformly a little softer than natural, which was, however, probably owing to the heat of the weather. Many of the veins were distended with soft coagula, others were empty. The basilar artery was empty. The cavity of the thorax was much contracted by the diaphragm being strongly projected upwards. The lungs were everywhere bound to the walls of the chest, by old, very tough adhesions. These were especially numerous in the lower part of the right lung. The lungs were healthy. The bronchial glands were of large size, deep brown, and hard. The pericardium was distended with fluid. The walls and valves of the heart were normal. In both sides there were coagula. In the right ventricle the coagulum was markedly divided into two parts, the upper dirty white, the remainder of a dull red. On the left side the coagula were smaller, and the white portion only appeared in patches.

In the abdomen there was a moderate quantity of fluid. The walls were quite destitute of fat. The mesentery was excessively attenuated. The stomach and intestines were slightly congested, but otherwise healthy. The mesenteric glands were considerably enlarged, and of a darker colour than usual. The liver was

enormously enlarged, the enlargement principally taking place in the right lobe posteriorly and downwards. It weighed twelve pounds. The structure was unaltered. The gall-bladder was rather flaccid. The spleen occupied all the right side of the abdomen. It was attached by numerous bands of lymph to the diaphragm, abdominal parietes, and neighbouring viscera. It was of an oblong form, truncated at either end, and with a pretty deep, wide groove running obliquely from the inner surface across the front and downwards. It measured fifteen inches in length, averaged nine inches in breadth, and its thickness varied from two and a-half to five inches. It weighed thirteen pounds three ounces (avoirdupois). The capsule was uniformly thick, readily separated into several layers, and easily torn from the adjacent substance. In the neighbourhood of the groove, and in several other patches of smaller extent, it was much denser, of a dull dirty white colour, and almost cartilaginous to the feel. The substance when cut into, was firm, brownish, and in some parts mottled with patches of red and yellow. The pancreas was healthy. Nothing abnormal was presented by the supra-renal capsules. The kidneys were slightly enlarged and congested. The aorta and iliac vessels were filled with loose friable clots of a reddish colour, with patches of dirty white interspersed. In the inferior cava, a soft friable clot was lightly moulded to the whole vessel; it was dark-reddish, and had associated with it a small quantity of fluid of the same colour, and a few small white clots. The azygos vein was filled with dirty brown and white clots.

The thyroid body was normal.

The red and white clots were submitted to microscopic examination, and presented the characteristic appearances. The white clots were almost entirely composed of colourless blood corpuscles, and the red contained them in great abundance.

The portions of the spleen examined presented the usual elements, and there was nothing to distinguish them from similar parts in a state of health.

CASE 2.—George Pringle, tailor, aged 40, admitted into the hospital on 20th October, 1862.

He stated that he had been suffering from a protracted attack of dysentery, which had lasted for several months, and had only been checked within a few days of his admission. Previous to that he had always enjoyed good health.

Although not very much emaciated, he was in a state of extreme debility, and had the aspect of a person labouring under serious organic disease. He was very deaf, the deafness only having come on during the recent illness; and his eyesight was not so good as it used to be. He complained of constant pain in

the front of the head, and in the abdomen, especially over the stomach and spleen. On auscultation there was evident disease of the mitral valve. The lungs breathed quite normally. The abdomen was somewhat protruberant; its circumference at the umbilicus was $32\frac{1}{2}$ inches. The liver was much enlarged. The spleen could be felt extending to opposite the umbilicus, about two inches to the side of which it terminated in a sharply defined point. There was slight ascites and a little œdema of the legs and feet. The urine was of specific gravity, 1017, and loaded with urates. A drop of blood from the finger was of lighter colour than natural, and showed a vast increase in the number of the colorless corpuscles, which varied greatly in size, some being three times the diameter of others.

He was placed on cod-liver oil and iron, and seemed for a few days to improve slightly, but the improvement was of short duration. From his admission until his death, he suffered greatly from pain in his head, and excessive pain in his abdomen, caused partly by constantly recurring tympanites of the bowels. The kidneys also frequently acted but imperfectly. As it was evident that he was in a dying state, all that could be hoped for from treatment was merely to alleviate the more distressing symptoms without any anticipation of being able to give permanent relief. About a fortnight after his admission, considerable haemorrhage took place from a small pimple on the head; and early on the morning of the 11th November, excessive bleeding occurred from the lower gum. No laceration or abrasion could be seen, although the haemorrhage was confined to a space about an inch and a-half long. After using various remedies with temporary success, it was permanently arrested by the matico leaf, supported by a thick compress of lint between the gum and the cheek. He did not seem much weakened by the loss of blood (twenty or thirty ounces); but in about four hours coma set in, and he quickly died with all the symptoms of compression of the brain. The blood was examined immediately after its escape from the mouth, and found to present the leucocythemic characters in a very marked degree.

During the time he was in the hospital, there was never any looseness of the bowels or any perspirations.

The post-mortem was made twelve hours after death.

The membranes of the brain were very much congested, the veins and sinuses being full of semifluid blood. The lateral and third and fourth ventricles were distended by soft coagula. The brain substance itself did not seem much altered, although beneath the lateral ventricles it appeared slightly softened.

The pleuræ were universally bound down by tough adhesions. The lungs were congested, but otherwise healthy. The pericar-

dium contained a moderate quantity of fluid. The heart was rather flabby. The left coronary artery was ossified. The mitral and aortic valves were thickened. All the cavities of the heart were filled by semifluid, grumous, dirty brick-red coagula, those on the right side being larger and softer. There were no distinct white clots.

The parietes of the abdomen were almost destitute of fat. The mesentery was much attenuated, and had but a small quantity of fat. The mesenteric glands were enlarged and indurated, but not to any very great extent. The intestines presented numerous small cicatrices of antecedent dysentery, most abundant in the large intestine. The liver was much enlarged, and weighed nine pounds and a quarter. It was soft and flabby throughout, owing to the peculiar quality of the blood with which all its vessels were filled. There was no abscess or appearance of any former one. The gall-bladder was full of a clear dark bile. The spleen was very much enlarged, and weighed four pounds and a-half. Structurally it was unaltered. The left supra-renal capsule was somewhat harder than natural, the other presented nothing unusual.

The abdominal aorta and iliac and femoral vessels were full of the usual grumous, semifluid clots, which here, however, presented a few small whitish clots. The iliac veins and inferior cava were full of the same blood, without the whitish clots.

The whole blood of the body was of a dirty brick-red colour, forming grumous, friable, or soluble clots, nowhere firmly coagulated. The coagula in the ventricles of the brain were more consistent. It had throughout a peculiar sticky feel, somewhat like that of boiled starch.

The first of these cases is remarkable, as showing the enormous dimensions the liver and spleen must have assumed before the pain or disturbance to the system became so great as to attract much notice. Judging by the slight alteration that took place in their size while he was in the hospital, the disease must have been progressing for a very long time, although he assured me that he never suspected that there was anything the matter with him until four or five weeks before his admission. No cause could be assigned for its origin. He never had any intermittent, and had always previously enjoyed good health. I have been informed, however, by Dr. Cruickshank, who had attended his family in Scotland, that several of them were affected with phthisis. In the case of Pringle, the long-continued dysentery, neglect, and probably want of proper food, were sufficient to account for the disease. There was no scorbutic appearance in either.

The blood, although presenting the same general microscopic character in both, differed in some respects. In Archibald's case, that taken during life, presented the usual appearance of healthy

blood, while in Pringle's it was of a much lighter colour—seemed diluted and watery. In Pringle, also, the relative proportion of the colorless corpuscles was much greater, and their size varied much more. In Archibald, after death, the coagula was much firmer and in general divided into two parts, the white and the red. In Pringle, the blood seemed to have greatly lost its coagulating properties, and scarcely any white patches were found in the coagula after death. The peculiar haemorrhagic character of his blood was, no doubt, the cause of the fatal effusion from the choroid plexus into the ventricles of the brain.

With regard to the treatment of leucocythemia, there can, I think, be no doubt that the chief indication is to support the strength as much as possible. The great poverty of fat in these two cases, would point to the necessity for a plentiful supply of rich food, and the persistent exhibition of cod-liver oil. Of the tonics that may be used, most benefit may probably be expected from steel, from its well-known effects in increasing the number of the red corpuscles. Bromide of potassium is said to have proved beneficial in some cases; with Archibald, however, although perseveringly given for nearly a month, it caused no improvement. The complications that may arise in the course of a case, can have no fixed treatment, but must be met by appropriate remedies. In troublesome haemorrhage, such as occurred in the second of these cases, in addition to the local application of styptics, it might be worth while to try the effects of turpentine internally.

